SECTION 5 - DRINKING WATER

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Synopsis

NOTE: The purpose of this section is to provide information the safe drinking water use at NWS facilities and work sites.

The section applies to all NWS facilities, work sites and employees.

Initial Implementation Requirements:

- Determine Source of Drinking Water - Bottled Water, Private Well or Public Water System
- If Bottled Water:
  - Attempt to learn where and when the water was bottled (5.5.1)
- If a Well:
  - Determine if the well serves more than 25 people 60 days per year (5.5.1)
    - If no, test water for nitrate and coliform bacteria, total dissolved solids, and pH (5.5.2a)
    - If yes, perform all testing as required by the Safe Drinking Water Act (5.5.1)
- Initiate Water Conservation Program (5.6)
  - Inform NWS personnel on the necessity and scope of the program.

Recurring and Annual Task Requirements:

- If Water Comes from a Well:
  - Test water on an annual basis (5.5.2a)
  - Maintain the well and surrounding area (5.5.2b)
  - Provide information on the water conservation program on a periodic basis

Drinking Water Checklist	YES	NO	N/A
1. Does the facility/work site use a well that supplies more than 25 people? (5.5.2)	—	—	—
2. Does the facility/work site use a private well (supplies fewer than 25 people)? (5.5.2)	—	—	—
3. If a private well, is a test nitrate and coliform bacteria, total dissolved solids, and pH to detect contamination problems performed annually? (5.5.2a)	—	—	—
4. If the well is under the control of the NWS:	—	—	—
• Is it periodically inspected for cracked or broken casing or cap? [5.5.2b(1)(a)]	—	—	—
• Is the area surrounding the well sloped away from the well head? [5.5.2b(2)]	—	—	—
• Has a sanitary seal been applied to prevent unauthorized use or entry? [5.5.2b(3)]	—	—	—
• Are records of all well maintenance kept on-site? [5.5.2b(4)]	—	—	—
• Are chemical mixing activities performed away from the well? [5.5.2b(6)]	—	—	—
• If a septic system is also used, is the septic system pumped and inspected according to local Health Department guidelines? [5.5.2b(7)]	—	—	—
5. Has a water conservation program been implemented? (5.6)	—	—	—

SECTION 5 – DRINKING WATER

5.1 Purpose and Scope

This section is promulgated to ensure all NWS personnel are provided clean, pure drinking water at all NWS facilities and work sites. The section applies to all NWS facilities and work sites.

5.2 Definitions

Gray Water	Slightly contaminated water resulting from washing/rinsing operations.
Operating Unit	Includes the National Centers for Environmental Prediction (NCEP), National Data Buoy Center (NDBC), NWS Training Center (NWSTC), National Reconditioning Center (NRC), National Logistics Support Center (NLSC), Radar Operations Center (ROC) or the Sterling Field Support Center (SFSC).
Station Manager	For the purpose of this procedure, the Station Manager shall be either the NWS Regional Director; NCEP Director; Directors of Centers under NCEP (Aviation Weather Center, NP6; Storm Prediction Center, NP7; Tropical Prediction Center, NP8, and Space Weather Prediction Center, NP9); Directors of the NDBC, NWSTC, and Chiefs of NRC, ROC and SFSC facilities; or Meteorologist in Charge (MIC), Hydrologist in Charge (HIC), or Official in Charge (OIC).
Xeriscaping	Landscaping technique which minimizes the use of water for irrigation.

5.3 Acronyms

CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
SECO	NOAA Safety and Environmental Compliance Office
NOAA	National Oceanic & Atmospheric Administration
NWS	National Weather Service
NWSH	National Weather Service Headquarters
SDWA	Safe Drinking Water Act

5.4 Regulatory Requirements

Under the authority of the Safe Drinking Water Act (SDWA), the EPA has established the Office of Groundwater and Drinking Water that has created regulations for:

- Drinking water
- Standards for public drinking water systems
- Programs to protect groundwater supplies.

5.5 NWS Program

5.5.1 Public Water Systems

NWS facilities and work sites receive drinking water from one of three sources: bottled water, a public drinking water system, or a private well.

Of these, the EPA regulates the public water systems under the SDWA by setting and enforcing water quality standards. The local water authority or system is required to ensure the water it produces meets the EPA drinking water standards. NWS facilities or sites connected to public water systems are only required to ensure the incoming water piping system is properly installed and maintained to avoid any cross contamination with the waste or sewage drain piping system.

Normally the use of bottled water is considered a safe alternative, however, facilities using this type of drinking water must always be aware where the water is bottled and approximately when. Cases have been reported where water bottled after a major weather or natural event in the area of the bottling plant had been contaminated causing warnings to be issued.

If the drinking water for a NWS facility is supplied by a well and the well serves more than 25 people at least 60-days per year, the well is considered a public water supply and subject to all the requirements of the SDWA.

Because the requirements for public drinking water systems are very extensive and expensive, NWS facilities that meet this definition must contact the NWSH Environmental and Safety Office for assistance.

If an NWS facility uses bottled water, personnel should look at the label for bottler's certifications. Certified bottlers are preferable.

International Bottled Water Association (IBWA) is a trade organization for water bottlers. IBWA members must meet the organizations "model core" and are subject to annual inspections by an independent third party.

NSF International - Bottled water certified by NSF undergoes additional testing by unannounced annual plant inspections. NSF Certifications mean that the bottler complies with all applicable Food and Drug Administration (FDA) requirements including good manufacturer's practices.

Underwriter Laboratories (UL) is an independent accredited testing and certification organization that test bottled water to FDA, State and IBWA model core requirements.

5.5.2 Private Wells

Because the EPA considers water wells that supply water to fewer than 25 people to be "private wells," the agency does not regulate them or the water they produce. Some state and local governments do regulate these wells, and thus a check with the local Health Department will be necessary.

a. Water Testing

   For NWS facilities and work sites served by a private well, maintaining the system will include testing of the water annually for nitrate and coliform bacteria, total dissolved solids, and pH to detect contamination problems. If a problem is suspected, the water

should be tested more frequently and possibly for more potential contaminants such as radon or pesticides. A list of the 80 contaminants controlled by the EPA as part of the primary drinking water standards can be found in 40 CFR Part 141.

The testing for nitrate and coliform bacteria samples will typically cost between $10 and $20 to perform, however, testing for pesticides and other organic chemicals and metals can exceed several thousand dollars. The funding for this testing should be part of the operational budget for the facility.

Because the states certify water testing labs, a call to the State Certification Officer can quickly provide a list of labs that are approved to perform the testing. A list of State Certification Officers is available on-line at following EPA web site: http://water.epa.gov/scitech/drinkingwater/labcert/statecertification.cfm.

If a standard is exceeded, retest immediately and contact the NWS Regional/Operating Unit Environmental/Safety Coordinator, NWSH Environmental and Safety Office, and/or the Public Health Department for assistance.

If the problem persists, bottled water will have to be brought in to keep the facility or work site operational.

EPA recommends additional testing if the following situations are present:

1) An employee is pregnant or nursing
2) There is unexplained illness/illnesses
3) A change is noted in water taste, odor, color or clarity
4) A spill of chemicals or fuels into or near a facility well
5) Any part of a well system was replaced or repaired

Common sources of water contamination:

a. Agricultural – Pesticides, irrigation, and fertilizers
b. Commercial – Airports, construction, gas stations and storage tanks
c. Industrial – Asphalt, chemical storage, wastewater drainage, metal fabricators
d. Residential – Fuel oil, septic systems, sewer lines, household lawns
e. Other – Hazardous Waste and municipal landfills, storm water drains/basins and wells

b. Well Maintenance

If the water well is under the control of the NWS, it must be maintained and protected from contamination. This effort will include:

1) Periodically inspecting exposed parts of the well for problems such as:
   a) Cracked, corroded or damaged well casings
   b) Broken or missing well caps

c) Settling and cracking of surface seals

2) Sloping the area around the well to drain surface run-off away from the well

3) Installing a well cap or sanitary seal to prevent unauthorized use of, or entry into, the well

4) Keeping accurate records of any well maintenance, such as disinfection or sediment removal, that may require the use of chemicals in the well

5) Hiring a certified well driller for any new well construction, modification or abandonment and closure

6) Avoiding mixing or using pesticides, fertilizers, herbicides, degreasers, fuels and other pollutants near the well

7) Pumping and inspecting the septic system as often as recommended by the local Health Department

In addition, all facility maintenance personnel must be informed that they must:

1) Not dispose of wastes in dry wells or in abandoned wells

2) Not cut off the well casing below the land surface

3) Never dispose of hazardous materials in a septic system

5.6 Water Conservation

Regardless of whether a NWS facility or work site obtains drinking water from a municipal water system or an on-site well, the facility or work site will implement and maintain a water conservation program that acknowledges that water is a valuable resource that cannot and must not be wasted. The EPA estimates that of the 150-gallons of water each person uses every day only 1/2-gallon is used for drinking. The remaining 149-1/2 gallons are used for cooking, cleaning, flushing, watering lawns, etc.

The Conservation Program should include:

a. Replacement or maintenance of all leaking plumbing fixtures

b. Use of “gray water” where possible

c. Use of pressure-reducing valves on intake water feed lines to maintain the pressure to no more than 60-pounds per square inch

d. Use of low-flow shower heads and toilets

e. Use of “push” knobs on faucets rather than “turn” valves

f. Repair/replace of all leaky faucets

g. Use of “Xeriscaping” to reduce external water use. Xeriscaping is a landscaping program that:

1) Plans and designs to minimize expense and maintenance

2) Uses turf only where needed for functional purposes. Turf alternatives such as mulches and drought-tolerant ground covers are substituted.

3) Uses drought-tolerant plants and planning placement around sun exposure

4) Uses mulches for water retention, long-term fertilization and weed control

5) Efficiently irrigates through grouping plants according to water needs

6) Improves the soil to allow for better absorption of water

7) Maintains the landscape properly to save maintenance costs

5.7 Responsibilities

5.7.1 NWSH

a. The NWSH Environmental/Safety Office will provide assistance to Regional Headquarters, Operating Unit, and field personnel to ensure that NWS facilities comply with this section.

b. NWSH will coordinate with NOAA SECO, as necessary, regarding compliance issues related to this section.

5.7.2 Regional or Operating Unit Environmental/Safety Coordinator

a. Will monitor and promote compliance with the requirements of this section at field offices or Operating Unit.

b. Will ensure that applicable procedures are implemented at Regional Headquarters or Operating Unit facilities to ensure compliance with requirements of this section.

5.7.3 Station Manager

a. Will have oversight over the implementation of this section and ensure that the requirements of this section are followed by individuals at the NWS facility.

b. Will ensure sufficient personnel and funding are available to enable compliance with all applicable requirements of this section.

c. Will ensure that procedures are implemented at NWS field offices for protecting on-site well water quality.

d. Will review or delegate review of this section on an annual basis to ensure that the facility is complying with its requirements. Confirmation of this review will be forwarded to the Regional or Operating Unit Environmental/Safety Coordinator.

5.7.4 Environmental or Environmental/Safety Focal Point or Designated Person

a. Will ensure any tasks delegated to them by the Station Manager are implemented in accordance with the requirements of this section.

b. Will ensure NWS facility/work site drinking water is tested annually if the water is derived from a private well.

5.7.5 Employees

a. Will read, understand, and comply with the requirements of this section.

b. Will report all violations of the requirements of this section to their supervisor or Environmental Focal Point.

5.8 References

Incorporated References

The following list of references is incorporated as a whole or in part into this section. These references can provide additional explanation or guidance for the implementation of this section.

5.8.1 U.S. Environmental Protection Agency

40 CFR 141: Natural Primary Drinking Water Regulations
"Who is Responsible for Drinking Water Quality?" http://www.epa.gov/safewater/dwh/who.html